



**Dr. John Gartner  
(Norwich University)**

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**20 December 2021 Virtual Meeting– 6:00 PM**

**Dr. John Gartner (Norwich University) will present:**

**Major floods: Can we predict the geomorphic responses and can they help in river restoration?**

Catastrophic floods cause billions of dollars (U.S.) in damages and reshape landscapes. The 2011 Irene flood and 2013 Colorado flood demonstrated the societal and geologic relevance of floods and the need for quantitative tools to predict where different types of geomorphic changes will occur along rivers. The floods also showed the strong human desire to “fix” or “restore” rivers after floods. This talk shows results from two related studies.

The first study shows how the locations of landslides and floodplain deposition in major floods can be predicted using straightforward GIS modeling of stream power. The key parameter for these predictions is not the magnitude of stream power but rather whether stream power is increasing or decreasing from one location to the next downstream. The spatial gradients in stream power can also predict the effects of small and moderate floods, including where sediment, carbon, and pollutants are likely to be deposited on floodplains.

The second study examines the effects of humans trying to fix rivers after floods, through a case study on the Chickley River in western Massachusetts. After the 2011 Irene Flood, 8 km was channelized in an attempt to reduce future flood damages. Instead of being reimbursed with disaster relief funds, the town and the company that did the channelization were fined and forced to fund a restoration of the 8 km. We examined changes in woody debris, physical complexity, and channel stability—which is the ability of a stream to maintain channel geometry without severe erosion or deposition during water and sediment transport. The results show that the extreme flood created desirable conditions with stable channels, abundant woody debris, and habitat heterogeneity. The channelization created an unstable channel, removed all woody debris, and homogenized habitat. Restoration improved conditions but not up to the post-flood status. These results question the need to channelize and remove wood from rivers immediately after floods. Moreover, the study suggests that extreme floods are effective agents of river restoration on local and regional scales.

***This is a FREE virtual event—Please register through the CNYAPG website  
Zoom access instructions will be provided via email to registered attendees on the day of  
the presentation***

**Next virtual meeting - February 2021**

# CNYAPG Newsletter

*The CNYAPG Newsletter is a monthly publication of the Central New York Association of Professional Geologists dedicated to sharing upcoming events, delivering regular articles of interest and providing the Membership a forum for discussion.*

*The newsletter is prepared by the Officers and Board of Directors of CNYAPG (listed below).*

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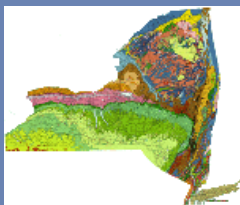
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## *President's Message— January 2021*

Ok! 2020 is in the rearview mirror! It is a new year and I hope this year makes up for what last year was. However, there were some good things last year. In December, for instance, CNYAPG hosted Dr. Laura Lautz of the National Science Foundation. Her virtual talk on the impact to the stream and groundwater systems of Meadowbrook creek, in the vicinity of the University Neighborhood here in Syracuse, was eye-opening and very informative. She presented water quality data that not only showed the seasonal impact of chloride from road salting in the adjacent urban area, but also hinted at other potential sources of contamination like nitrates. The event was also well attended and the question and answer session after the talk was involved and very lively.

Syracuse also had another cool, geological related event in December. On December 2nd around noon, a fireball was spotted over southern Canada and Central New York. The meteor that was calculated to be approximately one meter across and weighing between 800 and 850 kilograms broke up around 35 kilometers up in the atmosphere. It would have hit the atmosphere traveling about 25km/sec (gentle considering most hit the atmosphere traveling around 65 to 70 km/sec). The event produced a bright daytime fireball (or Bolide) and loud sonic boom. I, personally, did not hear or see it (I was trapped in an office behind a desk ☹) but the event was reported to have been heard and seen from as far away as Michigan, Maryland, and Ontario Canada. This was not Chelyabinsk 2013, but as I tell my students in both my Solar System and Natural Hazards courses, “Rocks do fall from the sky and bad things can happen as a result. We have just been lucky so far.”

2021 has so much promise. This month, John Gartner of Norwich University, a military college with a rich history, will be our guest speaker. In February, not one but two spacecraft from earth arrives at Mars. The Perseverance Rover gets to Mars on February 18th and China's Tianwen-1 mission also arrives around that time, and they will issue in a new era in Mars exploration. We are also lining up several excellent guest speakers for the remainder of our 2020-2021 season, including the last year's CNYAPG Student Scholarship award winners. I hope all of you will attend this month's guest speaker presentation.

Lastly, as most of you NYS-PGs already know, the continuing education bill for the PG-licensing in New York has been signed by the governor. A plan on how continuing education courses will be certified is being worked out, and more news is forthcoming later this year from NYSCPG. This is going to be an exciting year (for the right reasons) and I am looking forward to it with optimism.

Happy New Years,

Calvin K. Prothro; P.G.  
President, CNYAPG

## Programming Note & Upcoming Events

As noted previously, CNYAPG has temporarily transitioned to a virtual Zoom platform beginning with the October 2020 meeting.

**January 20, 2021** 6:00 PM– CNYAPG– *Major floods: Can we predict the geomorphic responses and can they help in river restoration?*

John Gartner– Norwich University  
Virtual Meeting– [www.cnyapg.org](http://www.cnyapg.org)

**February 17, 2021** 6:00 PM– CNYAPG– *Finger Lakes Water Quality. Cyanobacteria in our Lakes*

Dr. John Halfman — Hobart & William Smith  
Virtual Meeting– [www.cnyapg.org](http://www.cnyapg.org)

**March 17, 2021** 6:00 PM– CNYAPG– *Topic TBD*

Dr. Alka Singhal — Ramboll  
Virtual Meeting– [www.cnyapg.org](http://www.cnyapg.org)

**April 21, 2021** 6:00 PM– CNYAPG– *2020 Scholarship award winner*

Nicolás Pérez-Consuegra – Syracuse University  
Virtual Meeting– [www.cnyapg.org](http://www.cnyapg.org)

**May 19, 2021** 6:00 PM– CNYAPG– *Topic TBD*

Dr. Joe Levy– Colgate University  
Virtual Meeting– [www.cnyapg.org](http://www.cnyapg.org)



Arches National park (Photo by Will Hackett)

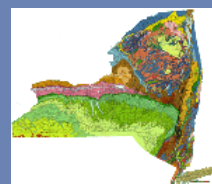
## CNYAPG Governance

### Membership Renewal

CNYAPG's membership period follows the CNYAPG meeting year from September through August. Renewals are due in September. To renew or become a new member, simply complete the membership form, available on our website at [www.cnyapg.org](http://www.cnyapg.org). Membership is only \$25 per year and all money received is used in support of our organization.

Join CNYAPG at our social networking groups on [Facebook](#) and [LinkedIn](#). These sites (always under development) will provide online forums for discussion, as well as another way to inform our members and networking opportunities. For more information about our social media sites e-mail us at [admin@cnyapg.org](mailto:admin@cnyapg.org).

The CNYAPG was founded in 1993 to strengthen and advance the geological sciences. CNYAPG conducts regular meetings on the third Wednesday of each month from September to May. Meetings feature dinner and distinguished speakers whose presentations invite comment and discussion.



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